


```
bind address 1.1.1.1
#exit
```

预料之中的行为是，如果其中一个上述选项为L2TP基于APN配置，网关GPRS支持节点

信息包数据网络(PDN)网关(GGSN/PGW)使用IMSI或MSISDN PPP认证与L2TP网络服务器(LNS)。选项运作正如所料，万一没有用户设备提供的用户名(UE)。

ii

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```
INBOUND>>>>> 09:57:08:270 Eventid:141004(3)
[PGW-S5/S2a/S2b]GTPv2C Rx PDU, from 213.151.233.172:35664 to 213.151.233.230:2123 (271)
TEID: 0x00000000, Message type: EGTP_CREATE_SESSION_REQUEST (0x20)
Sequence Number: 0x317962 (3242338)
```

GTP HEADER

```
Version number: 2
TEID flag: Present
Piggybacking flag: Not present
Message Length: 0x010B (267)
```

INFORMATION ELEMENTS

IMSI:

```
Type: 1 Length: 8 Inst: 0
Value: 231014450903030
Hex: 0100 0800 3201 4154 9030 30F0
```

MSISDN:

```
Type: 76 Length: 6 Inst: 0
Value: 421917667546
Hex: 4C00 0600 2491 7166 5764
```

MOBILE EQUIPMENT IDENTITY:

```
Type: 75 Length: 8 Inst: 0
Value: 3594050557927001
Hex: 4B00 0800 5349 5050 7529 0710
```

[...]

ACCESS POINT NAME:

```
Type: 71 Length: 38 Inst: 0
Value: ltpipsec.corp.test.mnc001.mcc231.gprs
Hex: 4700 2600 086C 7470 6970 7365 6304 636F
    7270 0474 6573 7406 6D6E 6330 3031 066D
    6363 3233 3104 6770 7273
```

SELECTION MODE:

```
Type: 128 Length: 1 Inst: 0
Value: MS provided APN,subscr not verified (0x01)
Hex: 8000 0100 01
```

PDN TYPE:
Type: 99 Length: 1 Inst: 0
Value: IPV4
Hex: 6300 0100 01

[...]

PCO:
Type: 78 Length: 32 Inst: 0
Container id: 0xC023 (PAP)
Container length: 0x06 (6)
Container content:
 Auth-Req(0), Name=, Passwd=
Container id: 0x8021 (IPCP)
Container length: 0x10 (16)
Container content:
 Conf-Req(0), Pri-DNS=0.0.0.0, Sec-DNS=0.0.0.0
Container id: 0x000D (IPv4-DNS-Server)
Container length: 0x00 (0)
Container content:
 DNS Address: Request for IPv4 DNS Address allocation
Hex: 4E00 2000 80C0 2306 0100 0006 0000 8021
 1001 0000 1081 0600 0000 0083 0600 0000
 0000 0D00

[...]

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<<<<OUTBOUND 09:57:08:295 Eventid:25001(0)
PPP Tx PDU (20)
**PAP 20: Auth-Req(1), Name=421917667546, Passwd= <-- username is replaced with MSISDN
as the APN is configured with "msisdn-auth"**

如果有UE，提供的用户名选项不工作。在这种情况下，GGSN/PGW发送用户名和密码配置在APN里面。
如果什么都没有配置那里

Friday April 07 2017
INBOUND>>>> 09:47:51:254 Eventid:141004(3)
[PGW-S5/S2a/S2b]GTPv2C Rx PDU, from 213.151.233.172:35824 to 213.151.233.230:2123 (279)
TEID: 0x00000000, Message type: EGTP_CREATE_SESSION_REQUEST (0x20)
Sequence Number: 0x5C4D6C (6049132)
GTP HEADER
Version number: 2
TEID flag: Present
Piggybacking flag: Not present
Message Length: 0x0113 (275)

INFORMATION ELEMENTS
IMSI:
Type: 1 Length: 8 Inst: 0
Value: 231014450903030
Hex: 0100 0800 3201 4154 9030 30F0

MSISDN:
Type: 76 Length: 6 Inst: 0
Value: 421917667546
Hex: 4C00 0600 2491 7166 5764

MOBILE EQUIPMENT IDENTITY:
Type: 75 Length: 8 Inst: 0
Value: 3594050557927001

Hex: 4B00 0800 5349 5050 7529 0710

[..]

PCO:

Type: 78 Length: 40 Inst: 0

Container id: 0xC023 (PAP)

Container length: 0x0E (14)

Container content:

Auth-Req(0), Name=null, Passwd=null

Container id: 0x8021 (IPCP)

Container length: 0x10 (16)

Container content:

Conf-Req(0), Pri-DNS=0.0.0.0, Sec-DNS=0.0.0.0

Container id: 0x000D (IPv4-DNS-Server)

Container length: 0x00 (0)

Container content:

DNS Address: Request for IPv4 DNS Address allocation

Hex: 4E00 2800 80C0 230E 0100 000E 046E 756C

6C04 6E75 6C6C 8021 1001 0000 1081 0600

0000 0083 0600 0000 0000 0D00

[...]

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<<<<OUTBOUND 09:47:51:334 Eventid:25001(0)

PPP Tx PDU (16)

PAP 16: Auth-Req(1), Name=null, Passwd=null <-- username is the same as in the APN

解决方案

观察行为根据设计预计。

使用**验证imsi验证用户名小条apn prefer CHAPpco** (或**验证msisdn验证用户名小条apn prefer CHAPpco**)配置，当没有进来协议配置选项(PCO)时的用户名。

这是网络访问标识符(NAI)建筑配置的优先级顺序：

1. 如果出站用户名<1-128字符string>配置在APN里面，这在PAP/CHAP req改写其他配置/IE和发送。
2. 如果从UE发送的UE发送PCO用户名/密码，发送对在密码认证协议/挑战握手验证协议(PAP/CHAP) req的LNS。
3. 如果用户名没有从UE发送，默认情况下则**msisdn/imsi@APN**发送作为在PAP/CHAP req的用户名。
4. 进一步此CLI -**验证msisdn/imsi验证用户名小条apn**可以用于剥离APN和发送仅msisdn/imsi在PAP/CHAP req。

请注意，万一验证由Radius完成(locally) IMSI (或MSISDN)在Access-Request消息发送正如所料。

在L2TP方案，如果验证由RADIUS完成(在LAC侧)，预计用户名(IMSI或MSISDN)被看到在Access-Request消息，但是不在往LNS的验证Req。